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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,278

02/06/2004

Takashi Anezaki

YMOR : 306

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EXAMINER

BUKOWCZYK, JEREMY

ART UNIT

PAPER NUMBER

3609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/772,278

Applicant(s)

ANEZAKI ET AL.

Examiner

Jeremy Bukowczyk

Art Unit

3609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 102(a) as being anticipated by Ito (US 7,024,276 B2).

Ito discloses a method of teaching a traveling path to a robot (col. 4, lines 43-50), that moves autonomously (col. 16, lines 29-32). Ito further discloses a teaching object (col. 11, lines 18-21) that the robot monitors the position and movement in time series (col. 13, lines 4-9). Ito further discloses the robot detecting a traveling direction and travel distance of the robot, accumulating the direction and distance in time series, and converting the direction and distance into path teaching data (col. 10, lines 28-35). Ito discloses collecting the data using a recurrent neural network in the robot to perform time-serial learning, allowing the robot to automatically accumulate information like traveling direction and travel distance in time series and perform motion control based on combinations of segmented pieces of time-serial data (col. 10, lines 28-35).

As per claim 3, Ito discloses a position detecting unit by describing a receiving unit for detecting the position and direction of a sending source (col. 9, lines 29-37). Ito

Art Unit: 3609

further discloses a movement detecting unit that automatically segments and stores a motion pattern based on time-serial data (col. 10, lines 28-35). Ito further discloses a moving unit that performs motion control based on combination of segmented pieces of time-serial data (col. 10, lines 28-35). Ito further discloses a movement detecting unit for detecting a traveling direction (col. 9, lines 29-37) and travel distance (col. 12, lines 4-9). Ito further discloses a data converting unit for accumulating the movement in time series and converting the movement into path teaching data (col. 10, lines 38-35).

As per claim 5, Ito discloses using units for receiving transmitted waves such as electric waves to detect the position of a teaching object (col. 9, lines 29-37), which inherently would require an antenna to receive those waves.

As per claim 6, Ito discloses using a camera (15) to detect the position of a teaching object (col. 9, lines 29-37).

As per claim 7, Ito discloses using a sound source such as sonic waves or supersonic waves to detect the position of a teaching object (col. 9, lines 29-37). Ito further discloses a sound input member (16) and a movement detecting unit that performs distance detection (col. 12, lines 4-9) and direction (col. 9, lines 29-37). Ito further discloses detecting and confirming a signal through the use of a recurrent neural network that is used as a data converting unit for accumulating the movement in time series and performing motion control based on the segmented pieces of time-serial data (col. 10, lines 28-35).

As per claim 8, Ito discloses a detecting unit for detecting a position of the teaching object where the teaching object contacts the robot by teaching motions in a robot by applying external forces to the machine body of the robot (col.11, lines 16-21).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (US 7,024,276 B2), in view of Mattaboni (4,638,445).

As per claim 2, Ito discloses a method of teaching a traveling path to a robot (col. 4, lines 43-50) that moves autonomously (col. 16, lines 29-32). Ito further discloses a teaching object (col. 11, lines 18-21) that the robot monitors the position and movement of in time series (col. 13, lines 4-9). Ito further discloses using a recurrent neural network in the robot to perform time-serial learning, allowing the robot to automatically accumulate information like traveling direction and travel distance in time series in order to create taught path teaching data to perform motion control based on combinations of segmented pieces of time-serial data (col. 10, lines 28-35). Ito fails to disclose checking the traveling path of the teaching object, and the robot moving while correcting the taught path teaching data.

Mattaboni in the same field of invention discloses a mobile robot that periodically evaluates progress in case in-course correction is needed (col. 25, lines 53-54).

From this teaching of Mattaboni, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of teaching a traveling path to a robot that moves autonomously of Ito to include periodically evaluating progress in case in-course correction is needed as taught by Mattaboni in order to provide a process which imposes rules to reach objectives (col. 5, line 68) without operator intervention (col.6, line 1).

As per claim 4, Ito discloses a position detecting unit by describing a receiving unit for detecting the position and direction of a sending source (col. 9, lines 29-37). Ito further discloses a movement detecting unit that automatically segments and stores a motion pattern based on time-serial data (col. 10, lines 28-35). Ito further discloses a moving unit that performs motion control based on combination of segmented pieces of time-serial data (col. 10, lines 28-35). Ito further discloses a control unit (20) that serves as a main controller (col. 10, lines 7-8). Ito fails to explicitly disclose checking and correcting the traveling path of the robot.

Mattaboni in the same field of invention discloses checking and correcting the traveling path of the robot (col. 25, lines 51-54).

From this teaching of Mattaboni, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify a robot having a function of learning a traveling path of Ito to include to checking and correcting the traveling path of the robot as taught by Mattaboni in order to provide a process which imposes rules to reach objectives (col. 5, line 68) without operator intervention (col. 6, line 1).

**Conclusion**


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vassallo discloses a robot autonomously traveling according to taught path teaching data and checking the traveling path of a teaching object and correcting taught path teaching data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Bukowczyk whose telephone number is 571-270-3022. The examiner can normally be reached on Mon-Thu 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynda Jasmin can be reached on 571-270-3033. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jb

 2/26/07  
LYNDA JASMIN  
SUPERVISORY PATENT EXAMINER